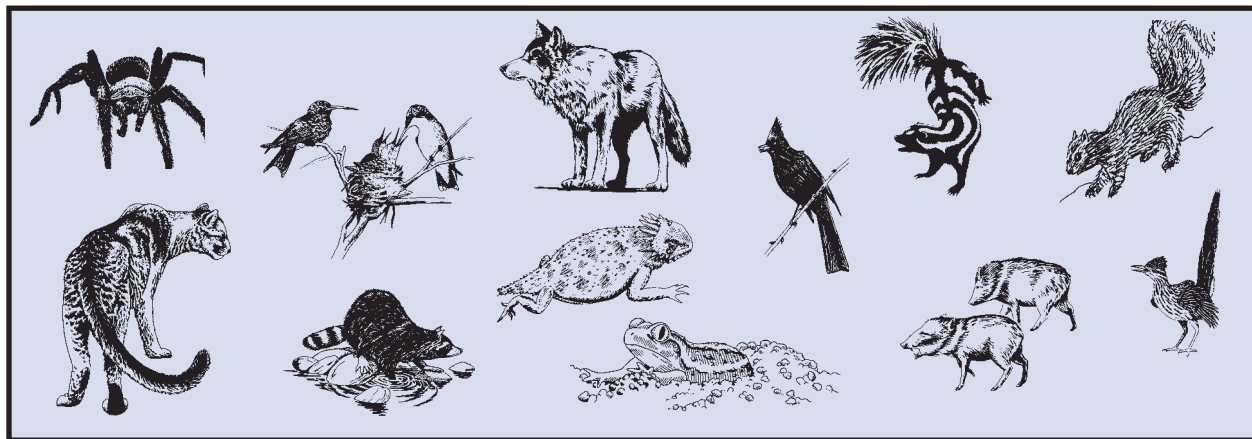


UNIT 5

RIVER CRITTERS



SANTA CRUZ RIVER CARDS

Students will learn to identify and/or review the general characteristics of various mammals, birds, insects, arachnids reptiles, and amphibians found along the Santa Cruz River.

PAGE 5.3



SANTA CRUZ RIVER BINGO

Through playing bingo, students will learn to recognize and identify various mammals, birds, insects, arachnids, reptiles, and amphibians found along the Santa Cruz River based on their general characteris-

PAGE 5.17

A BRIEF HISTORY

The Santa Cruz River is a haven for local critters. Local wildlife rely on it for water. The river provides a habitat for a myriad of animals. Populations of white-tail and mule deer, javelina, mountain lion, bobcat, jackrabbit, desert cottontail, rock squirrel, valley pocket gopher, opossum, coyote, gray fox, raccoon, badger, three types of skunk (spotted, hog-nosed and striped), porcupine, white-throated woodrat, and gray shrew all utilize the river.

Picture what the river was like when Father Kino first arrived in 1691. After a long day of traveling he probably felt he had found heaven with the lush cottonwood and willow riparian area. The endangered or threatened species of today were common in the time of Father Kino, including monkey-springs pupfish, river otter, jaguar, Mexican gray wolf, ferruginous pigmy owl, barking frog, Sanborns long-nosed bat, Gila topminnow, willow fly-catcher and yellowbilled cuckoo.

It didn't take long for things to begin changing. The introduction of cattle and wheat soon began to take a toll as native habitats were



destroyed for agriculture, and ranching purposes. Despite these negative impacts, the environment of the Santa Cruz Valley was not dramatically affected until the late 1800s. Prior to this time, the human population was relatively small, partially due to Apache attacks, and technologies did not have a great impact. With the arrival of Europeans emigrating to the west and the industrial revolution, the environment took a turn for the worse.

In the 1800s, cattle operations, railroads and cotton farms took their

toll on the environment. Cowboys brought large herds of cattle into the area and ranchers attempted to raise as many animals as possible, without effectively managing the rangeland. The growing number of cattle ate and trampled native plant species which were unable to reseed. Other introduced or exotic species, such as Johnson Grass, competed for space.

For the most part, wildlife was thought of as something to be conquered. Smaller animals such as beaver were removed for their pelts. Wolves, coyotes, large cats, raptors, and other animals, were considered threats and were often shot when seen. Bounty hunters were hired to track and kill what they considered to be predators.

The railroad and industrialization brought new technology and an increase in population to the area. Travel and movement of commerce improved and supplies were more readily available. Large companies and land owners often took everything they could from the land, destroying habitat and killing wildlife as they saw fit.

UNIT 5- RIVER CRITTERS - TEACHER BACKGROUND INFORMATION

The Santa Cruz River, historically, has always been intermittent with surface water drying up in places, depending on topography and weather conditions. But by 1970 the effects of misuse of the riparian and adjacent areas had taken its toll on the river.

Most surface water dried up except during the rains and once towering cottonwoods became rare. Then in 1972, the environment changed with the building of

the Nogales International Sewage Treatment Plant in Rio Rico, which over time, has restored the surface water to beyond historical records.

Today, we might imagine that the Santa Cruz River looks, at least in certain parts, similar to what it did in the time of Father Kino. Although the source is artificial, the water from the treatment plant has restored habitat that was once doomed. The creation of the Juan Bautista de Anza National Historic Trail, along with other areas set aside by the many people and groups working for the rivers provide invaluable recreation activities.

Improvement also insures that we leave a legacy for our youth. But is it enough?

For this reason, education about the river and its wildlife are essential to insure a future citizenry that will support the river.



RIVER CARDS

The Santa Cruz River cards consist of a variety of pictures and description information for all types of critters commonly found along the Santa Cruz River. Included are pictures and descriptions of mammals, birds, reptiles, arachnids, insects, and amphibians.

The cards and pictures may be used in a variety of different ways to enhance student knowledge and appreciation of local wildlife. The activities suggest various ways in which you can use the cards. We recommend that you play the Santa Cruz River bingo game with your students and use the

pictures as flash cards for learning quick identification of the animals. In addition to these, other games can be played with the cards. Please be imaginative in your use of these cards.

The pictures and information provided

may be used as is, although they are limited in size and description. We encourage you to make enlargements and display posters as appropriate.

Consider using the cards to:

- teach species identification, classification, physical characteristics, feeding and activity habits, and habitat.
- Reinforce what the students have learned and evaluate progress.
- Compare and contrast the animals represented by finding similarities and differences in their physical characteristics, (size, shape, coloring, skin and hair texture).
- Learn about the types of food that various animals eat and which animals eat the same types of food.
- Encourage students to learn and appreciate local wildlife and the areas that they inhabit.



9

LESSON OVERVIEW

Students will learn to identify and/or review the general characteristics of various mammals, birds, insects, arachnids reptiles, and amphibians found along the Santa Cruz River.

Subjects

Science

Science Standards

Science as Inquiry,
Life Science.

Objectives

Students will:

1. Discern physical and behavioral features of local animal species.
2. Formulate questions to identify local animal species.

Preparation

Teacher copy of Santa Cruz River Cards, **Master Pages 5.5 – 5.16.**

Time

15 - 30 minutes for each activity. Can also be used for quick questioning strategies.

Vocabulary

Amphibian, arachnid, bird, carnivore, habitat, herbivore, insect, mammal, omnivore, predator, prey, and reptile.

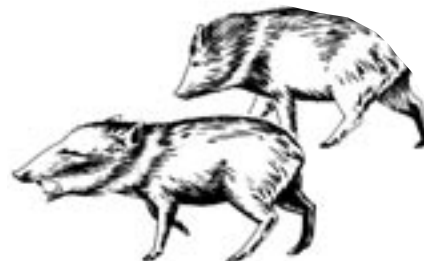
SANTA CRUZ RIVER CARDS

Activity 1

Animal Clue Game *

1. If students have not previously played the game, model and give clear instructions before starting.
2. Select one clue card from **Master Pages 5.5 - 5.8.**
3. Explain to students that you will be reading the clues about a certain type of animal and they are to try to guess its name. Ask students not to raise their hands or yell out if they guess the animal.

4. Read all the clues in sequence. When all the clues have been read, have them say or write down their guess.
5. Review and discuss the correctly guessed animal.
6. Repeat using other animal cards or create your own cards to use in the same manner.



* Activities are adapted from *Sharing Nature with Children*, with permission from the author, Joseph Cornell.

JAVELINA

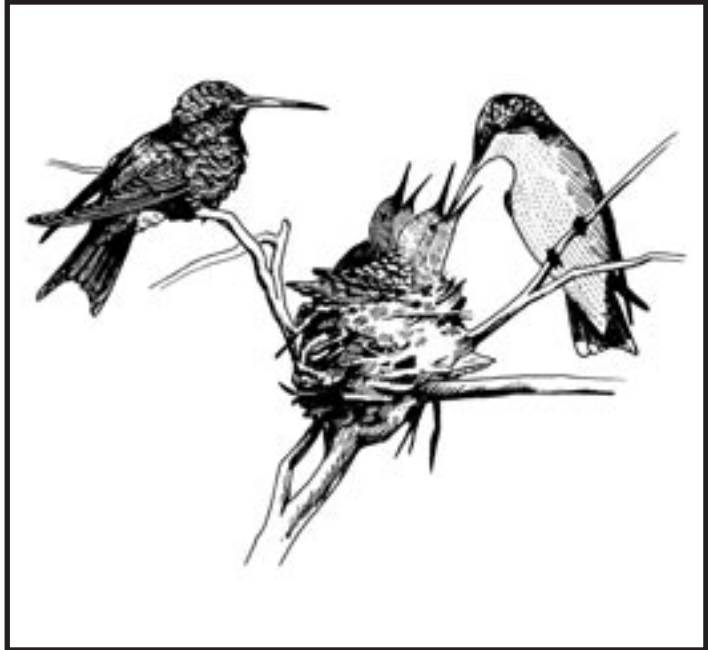
Dicotyles tajucu

1. I am busy both day and night.
2. I have 4 legs, a small tail, and my hair is very coarse and oily.
3. I cannot see well, but I have a good sense of smell.
4. I eat plants, shrubs and roots.
5. I do not like anything that gets too close and will attack if they do.
6. Although most of my teeth are flat, I have two big ones like tusks on an elephant.
7. I am considered to be a sloppy eater.

Activity 2

What Animal Am I?

1. Review selected animal species from **Master Pages 5.9 - 5.16**.
2. Choose one species without letting your students know your selection. The students can then ask you questions about the species to which you will respond with "Yes," "No," "Maybe" or "Sometimes." For example a student may ask: Are you as big as a breadbox?, Are you a mammal?, Do you eat meat?, etc. Students must ask at least five questions before they can begin guessing the animal.
3. Repeat the activity selecting other animals.
4. Once students have learned the routine of the activity and have studied enough about the animals' characteristics, they can take turns selecting animals with their classmates and asking the questions.



BLACK-CHINNED HUMMINGBIRD

Archilochus alexandri

Description: About 3" long, a small metallic-green bird with a black throat and white collar below it. With the sun shining just right, a purple patch will flash below his very long beak.

Habitat: These tiny birds winter in Mexico and then will travel as far north as Montana. Along the way they feed on nectar from brightly colored flowers.

Notes: The nest of the hummingbird is found in the fork of a branch and is only 1" high and 1-1/2" across. They can fly forward and backward, up and down. Their wings move so fast they make a humming sound, giving them their name.

Enrichment

- Make and laminate copies of cards for students to use as flash cards to play games such as go fish, concentration, matching or other games.

MOUNTAIN LION

Felix concolor

1. I am grayish-brown in color with lighter areas under my belly.
2. I look for food only at night.
3. Deer is my favorite food but I eat any animal I can catch.
4. I can weigh from 100 to 200 pounds and am 5 feet long not including my tail.
5. I have short round ears and yellow-green cat's eyes.
6. I am also known as a Cougar or Puma.
7. I am the largest cat native to the USA.
8. My cousin, after whom I am named, is known as king of the jungle in Africa.

JAVELINA

Dicotyles tajacu

1. I am busy both day and night.
2. I have 4 legs, a small tail, and my hair is very coarse and oily.
3. I cannot see well, but I have a good sense of smell.
4. I eat plants, shrubs and roots.
5. I do not like anything that gets too close and will attack if they do.
6. Although most of my teeth are flat, I have two big ones like tusks on an elephant.
7. I am considered to be a sloppy eater.
8. I look like and am often called a pig.

WHITE-TAILED DEER

Odocoileus virginianus couesi

1. I have large ears with white on the inside and gray-brown on the outside.
2. My teeth are not sharp and pointed, but flat.
3. I am small for my family and have a white tail.
4. I eat leaves, grass and twigs.
5. After my babies are born, they are left with only their color and spots to hide them.
6. I can run very fast and jump very high, even over fences.
7. Some of my kind have antlers.
8. Bambi is a relative of mine.

RACCOON

Procyon lotor mexicanus

1. I am warm blooded with four legs.
2. I eat about anything I can get my hands on.
3. I am very nimble and can pick up just about anything with my hands.
4. I hunt and look for food mostly at night. I am about the size of a small dog.
5. I am often found near water where I hunt for and clean my food.
6. I travel in small groups with two or more brothers and sisters.
7. I have a large bushy tail with rings. Some people mistake me for a bandit.

MEXICAN GREY WOLF

Canus lupis

1. I have four legs and I am big.
2. I weigh 60 to 100 pounds.
3. I hunt for my food at night.
4. I prefer meat of larger animals such as deer.
5. I am 5 feet long, have a long nose, and short ears.
6. I can talk with howls, growls and yips.
7. My relatives were once found all over the United States.
8. My species was recently returned to remote parts of Arizona.
9. I look like a dog and some call me Lobo.

COTTONTAIL RABBIT

Sylbilagus audubonii

1. I can run and jump very fast.
2. I do not have a stationary home, but sleep under bushes.
3. My paws are very furry.
4. I am about the size of a small cat.
5. I have flat teeth with two bigger ones in the front.
6. People hunt me for my soft warm fur.
7. People consider me to be cute and imitate me at Easter.
8. Part of my name comes from my tail that looks like a ball of cotton.

STRIPED SKUNK

Mephitis mephitis

1. My ears are small and rounded.
2. I eat almost anything, but prefer insects.
3. I am about the size of a small cat and have a long bushy tail.
4. I am usually a very gentle animal but lots of other animals and people are afraid of me.
5. My body color is black with two white stripes down my back.
6. I have a big tail that helps me if I am being attacked.
7. Some people say I smell bad.
8. When I get mad, I lift my tail and spray.

SPOTTED SKUNK

Spilogale gracilis

1. My ears are small and rounded.
2. I eat almost anything, but prefer insects.
3. I am about the size of a kitten and have a long bushy tail.
4. My body color is black with various white spots on my face and body.
5. I am usually a very gentle animal, but lots of other animals and people are afraid of me.
6. I have a big tail that helps me if I am being attacked.
7. Some people say I smell bad.
8. When I get mad, I lift my tail and spray.

BEAVER

Castor canadensis

1. I am about the size of a small dog.
2. I am known as a great swimmer.
3. My feet are webbed like those of a duck.
4. I have a large, paddle-like tail.
5. I have large front teeth to chew wood.
6. If I don't chew wood, my teeth will grow too big and I will die.
7. Many years ago, people blamed me for starting a disease called malaria and kicked us all out of the southwestern rivers.
8. I was re-introduced to the San Pedro River.
9. I have a flat tail and like to build dams.

GRAY ROCK SQUIRREL

Spermophilus variegatus

1. I am about 20 inches long and grey in color.
2. I spend much of my time in the ground.
3. At the first sign of danger, I will slip quietly into my house and stay there until I am safe.
4. I have sharp teeth and strong claws.
5. I eat seeds, nuts, fruits, berries, grass seeds, cactus fruits, acorns and pine nuts.
6. I am in the same family as rats and mice.
7. I am considered to be cute but sometimes I have diseases like rabies or plague.
8. I have a big bushy tail.

COYOTE

Canis latrans

1. I am a mammal found all over the United States.
2. I am a carnivore, but eat all sorts of things.
3. I like to run in groups.
4. I look pretty scroungy in the summer but have a beautiful coat in the winter.
5. I can talk with others of my kind by growls and yips.
6. I have a long dog-like nose.
7. I am often mistaken for my cousin who is the wolf, but he is much larger than I.
8. I am often seen howling at the moon.

BADGER

Taxidea taxus

1. I am short and very strong.
2. I have white markings on my face.
3. I eat mice, rats and squirrels, which I dig out of their homes in the ground.
4. I am a fighter and attack animals and people if cornered.
5. I am about 2 feet long and weigh 20 pounds.
6. I hunt for food only at night, and sleep in a different place every day.
7. I am mostly gray in color, and I have big claws about 1-1/2 inches long.
8. My babies are full grown in three months.

NORTHERN CARDINAL

Cardinalis cardinalis

1. If I am male, my face and throat are black.
2. When I choose my mate, we are together forever.
3. I love to sing and whistle all year long.
4. My bill is very strong and shaped like a cone.
5. I have wings and can fly.
6. Seeds are my favorite food.
7. I have a pointed crest on the top of my head.
8. If I am a boy, I look like a Christmas ornament sitting in a tree.
9. My body is bright red!

BLACK-CHINNED HUMMINGBIRD

Archilochus alexandri

1. I am always busy and rarely rest.
2. My home is lined with soft cobwebs.
3. I drink nectar from flowers and eat bugs.
4. Some of my species are about the size of a human's thumb.
5. I can fly forwards and backwards.
6. Sometimes people put food out for me in a glass jar, from which I drink with my long tongue.
7. I am one of the smallest birds and make a humming sound with my wings when I fly.

GILA WOODPECKER

Melanerpes uropygialis

1. My mate and I raise our young together.
2. I am very noisy.
3. As a boy, I have a red spot on my head.
4. I have a zebra striped cape.
5. I live in holes that I make in big trees.
6. I eat insects, cacti, berries, and eggs of other birds.
7. I am very commonly seen along the Santa Cruz River and at Tumacácori.
8. I drum on trees or on your house.
9. Some people call me "Woody."

TURKEY VULTURE

Cathartes aura

1. I am very quiet and rarely talk.
2. I live on cliffs or in trees with my friends.
3. In the morning, I sit stretched out and sun bathe to dry off.
4. You often see me from the highway circling in the sky.
5. I soar with "V" shaped wings and I hardly ever flap them.
6. I eat only dead animals.
7. I have no feathers on my head, which is bright red like a turkey.
8. I am also known as a buzzard.

RED-TAILED HAWK

Buteo jamaicensis

1. I have two legs.
2. I hunt rabbits, snakes and small mammals.
3. I am very large for my family.
4. My claws are big and sharp for grabbing my food.
5. My call is a high pitched whistle or screech (one falling note).
6. You may see me soaring above the highways, treetops or cliffs or on telephone poles.
7. Some people mistake me for an eagle.
8. My tail has red feathers.

GREATER ROADRUNNER

Geococcyx californianus

1. I eat all kinds of things, including lizards.
2. I live in desert bushes and grasses.
3. Sometimes you can hear my call which sounds like the clanking sound of coo coo-ah coo-ah.
4. I have a long body and tail.
5. I have two legs.
6. My feathers are dark brown with a little bit of green.
7. Although I have feathers, I don't usually fly.
8. I am known to run on roads.

GIANT DESERT HAIRY SCORPION

Hadrurus arizonensis

1. I am a southwestern desert arachnid.
2. My mother carries her young on her back.
3. I eat tiny insects.
4. I am found in desert washes, rocky areas, the open desert, and even in your house.
5. I am light brown with some yellow coloring.
6. I have two pincers with which I can hold and grab things.
7. I am poisonous, and you will be in pain if I sting you.
8. My tail curls and has a stinger at the end of it.

TARANTULA

Aphonopelma chalcodesa

1. I have black hair on my body and legs.
2. My coloring varies from different shades of brown to black.
3. I live under the ground.
4. The female in my species will live in the same tiny cave her entire life.
5. I am very large for my species.
6. Even though I don't usually bite, I scare people so I have been in some movies.
7. Although my venom is poisonous to animals, I rarely hurt humans.
8. I have eight legs.

**WESTERN DIAMONDBACK
RATTLESNAKE**

Crotalus atrox

1. I can be found in the western part of the United States.
2. I come out to hunt usually at night.
3. I mostly eat rats, mice and gophers.
4. I produce poison and can be dangerous.
5. I am cold blooded.
6. I have two fangs and no other teeth.
7. When I am frightened, I will curl up like a garden hose, raise my tail and rattle it to warn you not to come close to me.
8. I have diamond shaped patterns on my back.

HORNED LIZARD

Phrynosoma solare

1. I am found only in the western United States and Mexico.
2. I like to eat insects and love ants.
3. I like to bury myself in the sand.
4. I am cold blooded.
5. When frightened I squirt blood from my eyes.
6. I have very rough skin that looks like scales.
7. Although I am only 3-1/2 to 6-1/2 inches long, some say I look like a small dinosaur.
8. Some call me a toad, but I am really a lizard.

GIANT MESQUITE BEETLE

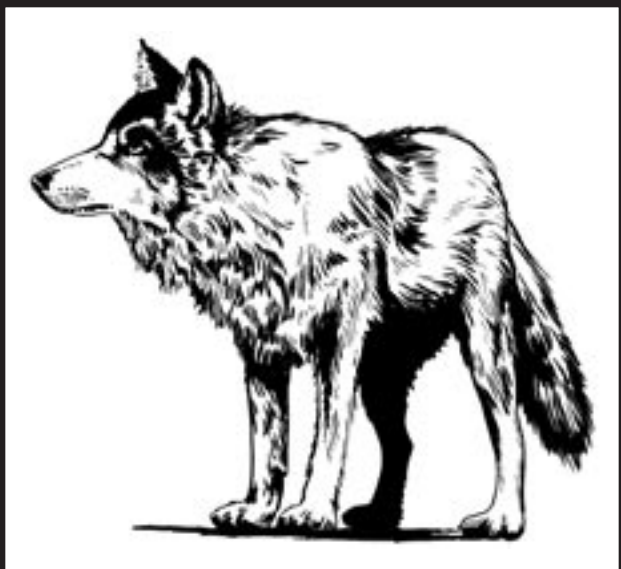
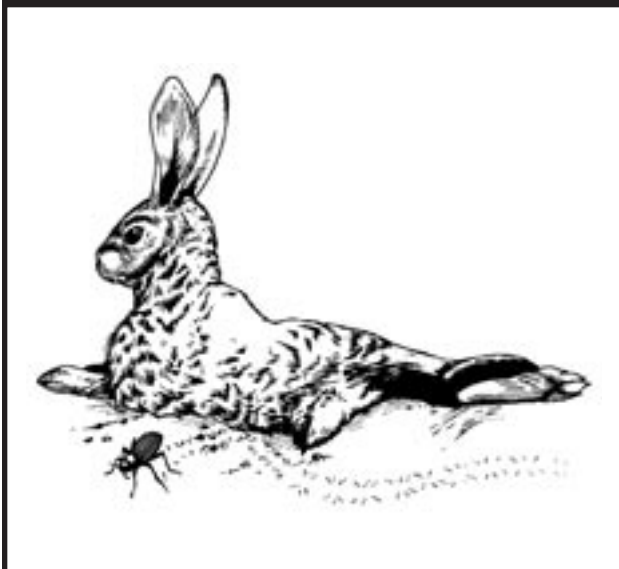
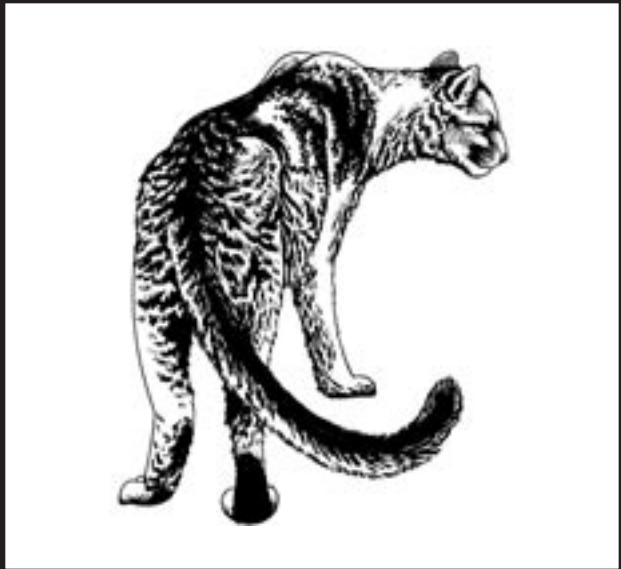
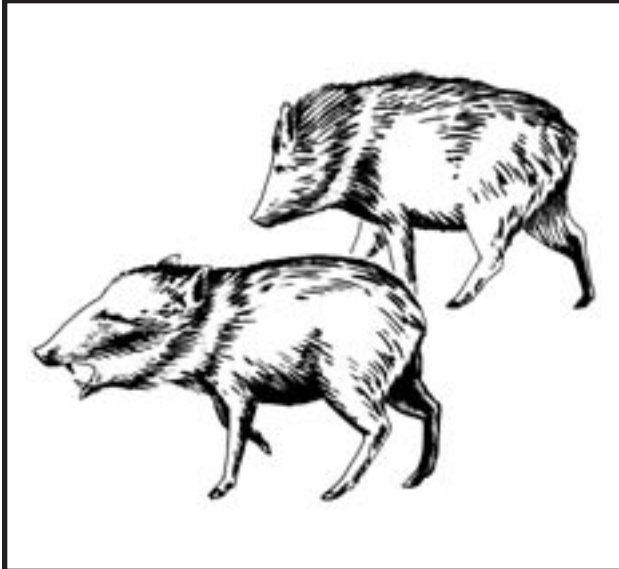
Thasus gigas

1. I am found in desert areas above the ground and in the mesquite trees.
2. I am very large for my type of creature.
3. I love sucking up plant juice.
4. I have two antennas and six legs.
5. I am red, white and black.
6. I can be found in bunches on mesquite branches.
7. I am a fussy eater and will only drink the juice of the mesquite tree.

SPADE-FOOTED TOAD

Scaphiopus couchi

1. I spend most of my time underground.
2. I love to eat insects.
3. My rear feet resemble a spade.
4. I am cold blooded.
5. I will come out when it rains during the summer months.
6. I will lay my eggs in the water.
7. Kids like to catch me.
8. My skin is a dull brown, green and slippery.
9. I get around by hopping.
10. There is a story about me turning into a prince.



MOUNTAIN LION

Felix concolor

Description: The largest cat in the United States - over five feet in length from the tip of his nose to the tip of his tail. It can weigh between 100 and 200 pounds. Lives mostly off deer and other smaller prey.

Habitat: Lives mostly in the mountains but also can be seen in the desert. In Arizona, prefers rugged, heavily vegetated areas such as the Chiricahua Mountains.

Notes: Also known as Puma or Cougar, they are very shy and try very hard to stay hidden from humans. The lack of understanding of the mountain lion's habits, along with folklore, has made most people very afraid of this animal.

JAVELINA

Dicotyles tajacu

Description: Weighs 35-50 lbs; very coarse salt and pepper colored hair. Looks and acts like a pig but is not. It belongs to the old world Peccary family.

Habitat: Found in Arizona, Texas, and New Mexico (also in South America) living in deserts and lower elevation mountains. Preferred foods are cactus, grass, shrubs, roots and tubers. Any place you find these types of plants and cactus you most likely will find javelina.

Notes: The javelina has very bad eyesight but a great sense of smell. Has a musk sack that lets out a very strong odor that other javelina can smell from great distances. This is how they can find their herd if they get lost.

WHITE-TAILED DEER

Odocoileus virginianus couesi

Description: Adult deer weigh 100 pounds or less. Their hair is tan-gray with white under parts. They are named for their white tail which can only be seen when it is up. The fawns are born with spots on their cinnamon-colored coats, which aid them in hiding from predators. They lose these spots in six months.

Habitat: High desert mountains, with rough wooded habitat. Food sources include grass, twigs, leaves, berries, and acorns.

Notes: Sometimes mule deer are mistaken for white-tailed deer. When the mule deer's tail is down it is white with a brown tip. On the white-tailed deer, you only see the white when the tail is up.

RACCOON

Procyon lotor mexicanus

Description: About the size of a small dog, it has gray fluffy hair with dark markings, a large bushy tail with rings and dark markings around the eyes making it look like a bandit. The raccoon has nimble human-shaped paws that are used to grab objects and clean food.

Habitat: Found in medium to high mountains, mostly in woods and forest environments. It is a very intelligent and curious animal and can be found going through trashcans and even inside houses looking for food.

Notes: The raccoon eats just about everything and is called an omnivore. Basically nocturnal but can also be seen in the day.

MEXICAN GREY WOLF

Canus lupis

Description: Often mistaken for a German Shepherd dog at first glance, but has longer legs, a shorter, straighter tail, bigger ears, and a longer snout. Has a light colored coat with a lot of gray, black, white and some tan.

Habitat: Wolves were hunted and trapped almost to extinction. The Mexican Grey Wolf lives in the high elevation desert, lower elevation or mountains. Its main source of food is white-tailed deer.

Notes: The wolf is a very intelligent animal and learned very quickly to prey on domestic animals - a cause of their demise. Mexican Grey Wolves were re-introduced into the White Mountains in 1999.

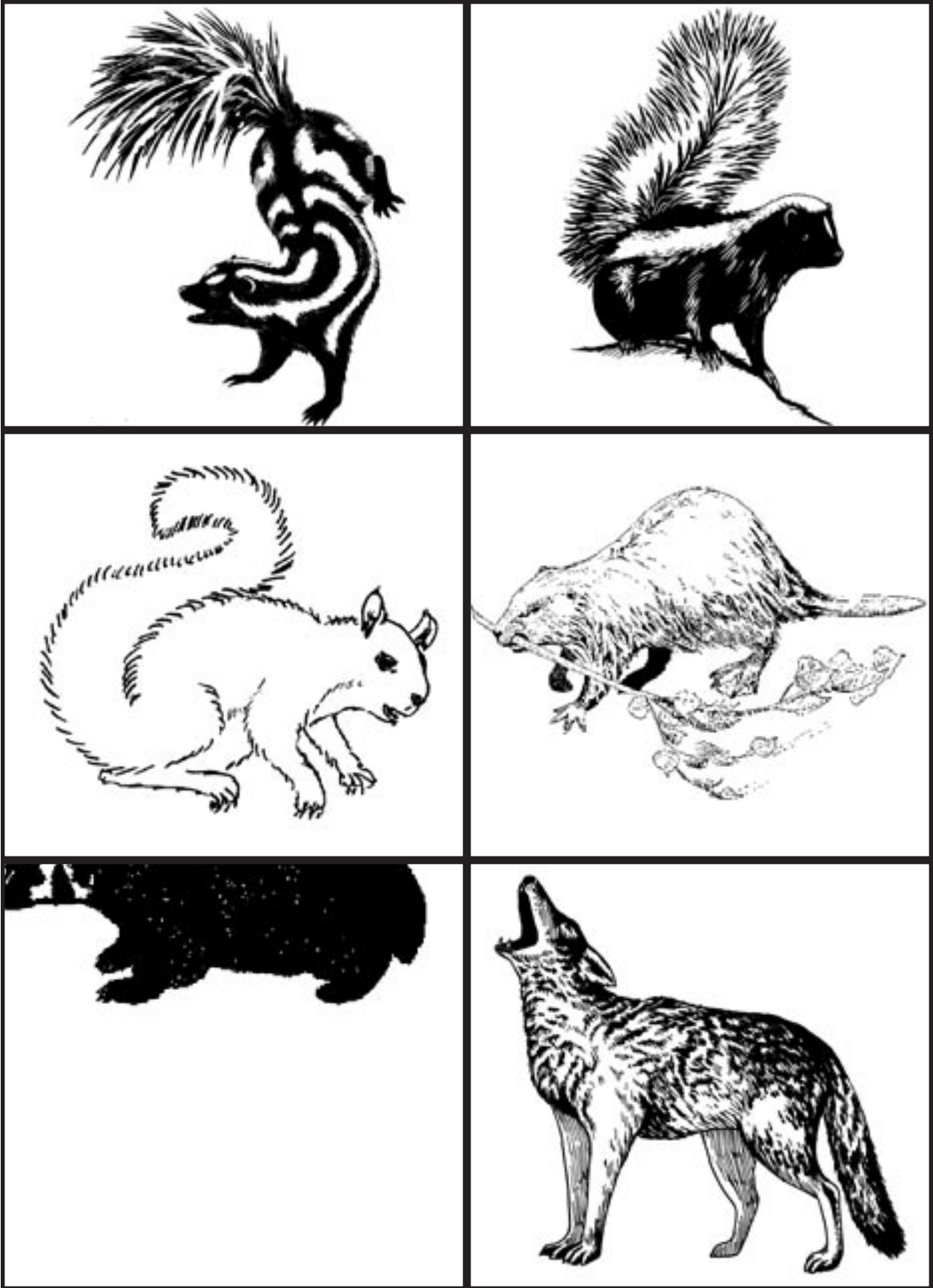
COTTONTAIL RABBIT

Sylbilagus audubonii

Description: Gets its name from its fluffy white tail that looks like a cotton ball. Smaller than many rabbits, its fur is light grayish-tan with some white. It has clear brown eyes and moderately long ears. It is the size of a cat.

Habitat: The cottontail lives in grassland, creosote brush, desert and mesquite forest. Although very common to the Arizona desert, they can be found in North Dakota, California, Montana, and Texas.

Notes: The cottontail defends itself from predators by running fast and darting in different directions. It will also lie very still and quiet so that predators and other threatening animals do not see it.



STRIPED SKUNK

Mephitis mephitis

Description: About the size of a cat. The striped skunk is distinguished by two white stripes down the back, a big bushy tail and a small head. Males are larger than females.

Habitat: The striped skunk can be found in most of the United States and Mexico in the desert, grassy plains and woodlands. The skunk moves slowly using ground cover as camouflage.

Notes: Although usually docile, when threatened, the skunk's defense is to spray a terrible odor up to 12 feet away. Four types of skunks are found in Arizona: striped, spotted, hooded and Hognosed. Skunks are primary carriers of rabies, dead or alive.

SPOTTED SKUNK

Spilogale gracilis

Description: This small nocturnal animal averages a total length of about 16 inches. The body color is black with various white spots on the face, four narrow white stripes along the front half of the back, a white blocked rump, and a tail that is half black and half white.

Habitat: They live in burrows or rock crevices in any location where there is lots of ground cover. Their diet consist of insects, lizards, rodents, birds' eggs and cactus fruits.

Notes: Their defense consists of stamping their front feet, turning around, hoisting their tail and emitting a repulsive odor. They can spray up to 12 feet away.

BEAVER

Castor Canadensis

Description: The size of a medium sized dog with webbed rear feet, a tail shaped like a paddle and large front teeth. The fur is brown and thick.

Habitat: Found in mountains and waterways in the western United States. At one time, beavers were found throughout the United States but were

depopulated by the fur trade. This species has been reintroduced to the San Pedro River.

Notes: In the southwestern riparian areas, the beaver was removed or extirpated both for furs and because they were an assumed agent of malaria (mosquitos breed in still water). Beavers must chew wood to dull their teeth. If not, the teeth will grow too big resulting in death.

GRAY ROCK SQUIRREL

Spermophilus variegatus

Description: These squirrels' coats are a mixture of dark grays and yellowish-browns with lighter gray on their front quarters, dirty white underneath, and bushy tails. They are large for ground squirrels, and can be up to 20 inches long.

Habitat: Their name comes from their favorite habitat of rock with good cover of trees and bushes into which they blend well. They live in dens of various types, which can vary from rock slopes to human dwellings.

Notes: They always have a lookout point near their dens on which they perch to survey the surroundings. If there is any danger they will let out a loud shrill whistle that warns everybody in the vicinity.

COYOTE

Canis latrans

Description: About the size of a medium sized dog, with longer legs and bigger ears, weighing 20 to 50 lbs. The fur is tan and yellow with some black and white. The winter fur is full and thicker and the summer coat is often thin and sick looking.

Habitat: Common throughout the United States. Adapts to open plains, forest, desert and brush areas. Prefers small game but will eat about anything.

Notes: Often at night, either a lone coyote or a pack can be heard howling. Coyotes are very adaptable and have survived many difficult times. In many native cultures, the coyote is known as the trickster.

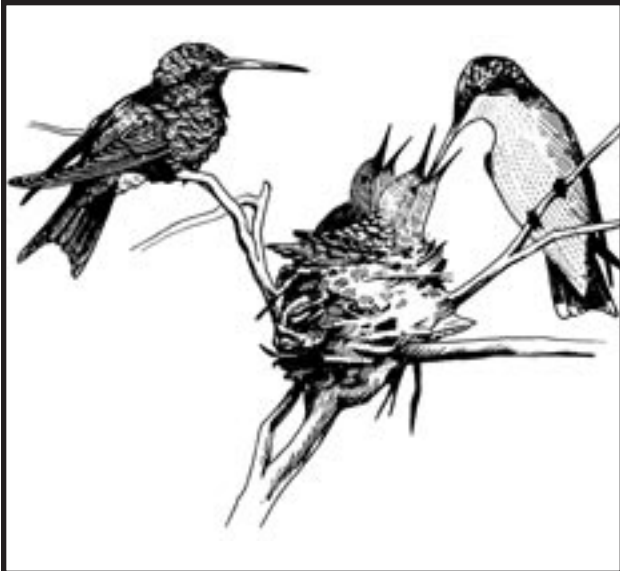
BADGER

Taxidea taxus

Description: A carnivore about two feet long, weighing 15 to 20 pounds. It is stocky shaped, with short legs, gray fur and distinct facial markings. Its legs are powerful, and it has long claws to dig and quickly unearth mice and squirrels.

Habitat: Found throughout the Sonoran Desert region. They live in underground burrows and move from den to den frequently, often every day.

Notes: Badgers are solitary and fierce, and most other animals avoid them because they are such good fighters. They eat only at night and roam over very large areas. Baby badgers stay with their mother for three months.



CARDINAL

Cardinali cardinalis

Description: Up to 7 1/2" long, the male is a bright Christmas red with a black face. Both male and female have distinct head crests and red beaks. The female is pinkish-peach colored.
Habitat: They are usually found in the mesquite-bosque and shrubs near the Santa Cruz River. They stay in southern Arizona year-round but are harder to spot in winter along the Santa Cruz.

Notes: They are ground feeders. The male is protective of his mate and surroundings and is known to attack his own reflection in windows because he thinks it is an intruder.

BLACK-CHINNED HUMMINGBIRD

Archilochus alexandri

Description: About 3" long, a small metallic-green bird with a black throat and white collar below it. With the sun shining just right, a purple patch will flash below a very long beak.
Habitat: These tiny birds winter in Mexico and then will travel as far north as Montana. Along the way they feed on nectar from brightly colored flowers.

Notes: The nest of the hummingbird is found in the fork of a branch and is only 1" high and 1-1/2" across. They can fly forward and backward, up and down. Their wings move so fast they make a humming sound, giving them their name.

GILA WOODPECKER

Melanerpes uropygialis

Description: This woodpecker has black and white zebra like stripes on the back and tail. Only the male has a bright red cap.
Habitat: They live year-round in the southwestern desert, woodland and cottonwood groves along the rivers. They eat insects, fruits of cactus, berries and the eggs of other birds.
Notes: The Gila Woodpecker is very common to the Santa Cruz River and can often be heard squawking.

TURKEY VULTURE

Cathartes aura

Description: Large black bird (25") with a bald, red head. When flying they have a wingspan of 6' and its wingtip feathers are spread apart, resembling fingers.
Habitat: They are found in open arid country, canyons and grasslands throughout the world. They are scavengers and feed on dead animals or carrion.
Notes: They soar high in the sky on thermal currents and can spot food from 2-1/2 miles away. Some Indian tribes thought the birds were messengers of the gods because of the way they soared higher and higher until they disappeared.

RED-TAILED HAWK

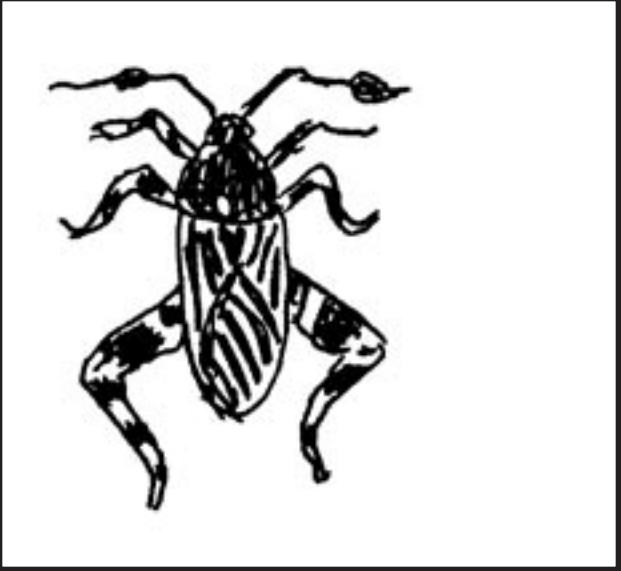
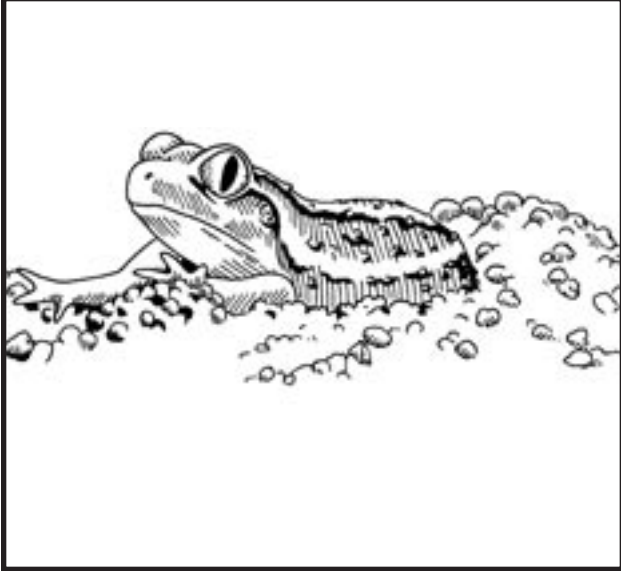
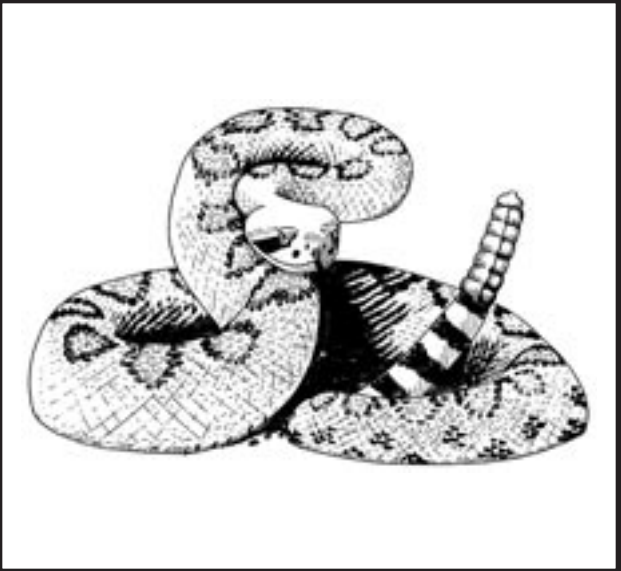
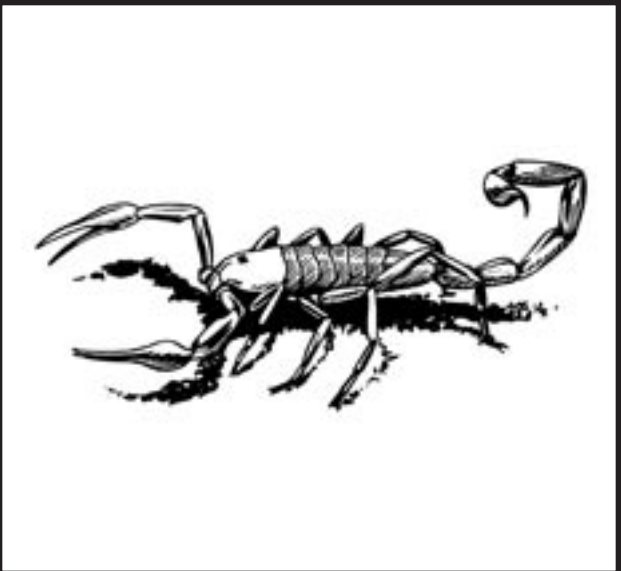
Buteo jamaicensis

Description: A large brown bird (18" long) with pale streaked breast, a dark belly band and a rusty red tail. They have a 4 foot wingspan, sharp claws or talons and a strong beak.
Habitat: Commonly found in open country, deserts and mountains. Often seen circling lazily in the air or perched on poles watching for their dinner which is usually mice, rabbits and other small animals.
Notes: They build a bulky platform nest of sticks that they defend by diving and screaming at intruders.

GREATER ROADRUNNER

Geococcyx californianus

Description: A large (22") ground bird with brown streaks, a shaggy crest, a very long tail, heavy beak and long blue legs.
Habitat: They live year-round in the Southwest deserts and mesquite shrub lands. Although they do fly, they prefer to run, hence, the name roadrunner. They are great hunters and eat the fruit of cactus, scorpions, tarantulas and snakes including rattlers.
Notes: We know them best from the Roadrunner cartoon with Wiley E. Coyote. Among Native Americans and Hispanics they were thought of as courageous and great hunters.



GIANT DESERT HAIRY SCORPION

Hadrurus arizonensis

Description: This arachnid is 5-1/2 inches long, with two pinchers and a stinger tipped "tail" that curves over its back when threatened. It is tan all over, with a yellowish back and brown hair on its legs and body.

Habitat: Found in the desert along dry river washes, rocky areas and in more familiar places like in desert gardens and work sheds. This scorpion inhabits areas where it can prey on small, soft-bodied insects.

Notes: The female will bear her young and carry them on her back for 10-15 days. The young will shed their skin several times before they reach maturity. Scorpions are venomous, and a person can become very sick if stung.

TARANTULA

Anphopelma chalcodesa

Description: These spiders are very hairy with long legs. Their color varies from dark brown to black with some grey. The female has hooks that look like large fangs and both male and female have a tight cluster of eight eyes.

Habitat: They are found in many parts of Arizona but mainly in the southwestern desert areas. They live in sandy washes and open desert areas where they find shelter in burrows. Their diet consists of insects and small rodents, such as mice, lizards and small snakes.

Notes: A tarantula's bite, although painful, is not life threatening. It will only bite if provoked. Females live 20 years and males live 8-10 years.

WESTERN DIAMONDBACK RATTLESNAKE

Crotalus atrox

Description: Up to six feet long. Its name comes from the dark diamond shaped blotches on its back. Skin color is tan, yellow and very light pink. Like all rattlesnakes, the head is shaped like an arrow.

Habitat: Southeastern California to Arizona, New Mexico to Arkansas and Northern Mexico. Lives in caves or underground. Lies on rocks, along trails, under bushes, and near washes.

Notes: Although very dangerous, the snake is just as afraid of you as you are of it. The rattle is a warning. If you leave the snake alone and are careful, it will leave you alone. The rattlesnake helps keep the rodent and rat population in balance by hunting them at night.

HORNED LIZARD

Phrynosoma solare

Description: This lizard has many scales and is crowned with sharp looking spines. Its color varies from tan to shades of dark brown and orange. The body is flat and close to the ground.

Habitat: These lizards can be found throughout Southern Arizona and into parts of Northern Mexico. They prefer rocky, sandy areas with shrub brush and succulents. They eat bugs and love ants and sometimes will eat very small snakes.

Notes: When threatened, they will squirt blood from their eyes. Their bodies will become very rigid when picked up.

GIANT MESQUITE BUG

Tassus gigas

Description: This bug is large and can be scary to look at. It has two long antennae and six legs. The color of this bug varies between black and red.

Habitat: The main area you find these bugs are any place where mesquite trees grow. Their diet consists mostly of the juice found in mesquite trees.

Notes: They can feed so much on the mesquite tree by sucking the juices that this beetle can actually kill part or sometimes the whole tree.

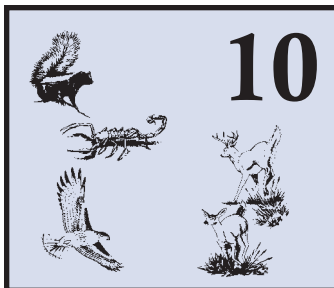
SPADE-FOOTED TOAD

Scaphiopus couchi

Description: Generally considered to be a small to medium sized toad with a white belly. The upper part of his body is yellowish green with different shades of marbling. The eardrum is clearly outside with no hump between the eyes. The body is plump and long.

Habitat: This toad can survive dry conditions so it is found in desert areas where mesquite and creosote grow. They live in other mammals' burrows and loose soil or sand. Their diet consists of insects and the larvae of insects.

Notes: Their voice is very loud like a bleating lamb and can be heard from a long way.



LESSON OVERVIEW

Through playing bingo, students will learn to recognize and identify various mammals, birds, insects, arachnids, reptiles, and amphibians found along the Santa Cruz River based on their general characteristics.

Subjects

Science

Science Standards

Science as Inquiry, Life Science

Objectives

Students will:

1. Compare, contrast, and classify animal species.
2. Identify animals by pictures and/or names.
3. Write the names and correctly spell at least five different species found along the Santa Cruz River.

Preparation

Cut out animal pictures on one copy of **Master Page 5.19** and place in a hat; make one copy of **Master Pages 5.19 and 5.20**, for each student; have beans (or other counting markers) glue and scissors available.

Time

One 50 minute session or less.

Vocabulary

Different names of animal species listed on **Master Pages 5.9 - 5.16**.

SANTA CRUZ RIVER BINGO

How to Play River Bingo

1. Make photocopies of **Master Pages 5.19 and 5.20**, for yourself and each student.
2. Cut up the species picture (squares) on **Master Page 5.19** and place them in a hat or vessel from which to select.
3. Have students cut out the individual species squares on **Master Page 5.19** and paste them at random onto **Master Page 5.20**, making an individualized bingo card.
4. When ready to play, select a species card from the hat (see # 2) and show the picture or call out the animal's name.
5. Discuss the characteristics of the chosen species.
6. Instruct students to place a bean on the corresponding animal picture on their bingo board as they are called.
7. Continue playing until the first player calls out bingo.

Alternative Play

Provide each student with a blank bingo card containing the appropriate number of squares. List the names of animals on the chalkboard at random. Have each student write the names of each species to be used on the squares. When ready, select pictures of each animal, and without verbally identifying the species, have the students match the name.



ENRICHMENT

- Refer to species cards and descriptions in Lesson 9, **Master Pages 5.9 - 5.16** for information and details. Cut up one or more copies to make a deck of cards for playing matching games, go fish, rummy, etc.

